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10/796,746

03/09/2004

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7590

11/25/2005

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EXAMINER

QI, ZHI QIANG

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/796,746

Applicant(s)

ISHIKAWA ET AL.

Examiner

Mike Qi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,7,9-11,14-16,18,19,28,30 and 32-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8,12,13,17,20-27,29,31,35 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/29/05; 1/18/05; 3/9/04</u> ; | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Election/Restrictions*

1. Claims 3-4, 7, 9-11, 14-16, 18-19, 28, 30, 32-34 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on Oct. 6, 2005.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 5-6, 8, 12-13, 17, 20, 27, 29 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,504,603 (Winker et al) in view of US 2004/0051831 A1 (Su Yu et al).

Regarding claims 1 and 2, the X-layers have a property of O-plate and the Z-layer is negative C-plate according to the specification (page 10, line 1 and page 11, line 10-11), such that Winker discloses (col.4, line 2-col.5, line 65; Figs.1-2 and 8) that a liquid crystal cell using one or more optical compensating elements (multilayer optical compensation film) comprising O-plate (X-layers) and C-plate (Z-layers), inherently, each layer Z (negative C-plate) satisfy the two relations:  $|n_x - n_y| < 0.001$  and

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$\Delta n_{th} = n_z - (n_x + n_y)/2 < -0.005$ ; and the X layer (O-plate) comprises positively birefringent material (see col.7, lines 58-65).

Winker does not explicitly disclose that the layer Z (C-plate) having a polymer with glass transition temperature above 180°C.

Su Yu discloses (paragraph 0102) that the retardation film (compensation film) is prepared from polymer at a temperature above the glass transition temperature, and the polymer should preferably be selected such that its glass transition or melting temperature is significantly higher than the operating temperature of the retarder, so as to leave a solid polymer, other wise it would be melted; and such method and suitable material are known to those skilled in the art.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the multilayer compensation film of Winker with the teachings of the polymer applied at a temperature above its glass transition temperature as taught by Su Yu, since such method to form the retarder are known in the art and the skilled in the art would be motivated for leave a solid polymer.

Regarding claims 5 and 6, Winker discloses (Fig.1) that the tilt angle  $\theta$  of the optic axis with respect to the x-y plane changes in the thickness direction, and the azimuthal angle  $\phi$  of the optic aixs, inherently, would be constant in the thickness direction.

Regarding claim 8, Winker discloses (Figs.2 and 8) that the layer X (O-plate) and the layer Z (C-plate) are disposed in a substrate (such as substrate 238).

Regarding claims 12-13, 17 and 20, the compensation film having function for the molecular alignment that is the property of the compensation film, so that, inherently, the Z layer (C-plate) functions as alignment layers, and X layer (O-plate) functions as alignment layers; such that the alignment layers disposed within the compensation film and also the alignment layer functions as barrier layer (see Fig.8).

Regarding claims 27, 29 and 35, Winker discloses (col.4, lines 3-15, col.5, lines 3-25; Fig.2) that a display comprises a liquid crystal cell (226), at least one polarizing element (222), and at least one optical compensation film (250); and the liquid crystal cell (226) is Twisted Nematic mode cell; and the substrate (238) is glass.

4. Claims 21-26, 31 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winker and Su Yu as applied to claims 1-2, 5-6, 8, 12-13, 17, 20, 27, 29 and 35 above, and further in view of US 6,937,310 B2 (Elman et al).

Regarding claims 21-26, 31 and 36, Winker and Su Yu teach the invention set forth above except for the Z layer comprising a polymer having a certain thickness of the Z layer so that the compensation film having a certain thickness; and the material of the substrate such as using triacetylcellulose (TAC), and the material of the polymer such as using vinyl.

Elman discloses (col.6, line 43 – col.7, line 59) that for an ease of the manufacturing, it is preferable to have a flexible substrate and typical polymeric substrate is triacetylcellulose (TAC); and the polymer contain non-visible chromophore group such as vinyl, carbonyl, amide, ester, carbonate, sulfone, azo and aromatic in the polymer backbone; and such polymer (Z layers) having certain thickness such as 0.1 to

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20 $\mu$ m, 1.0 to 10.0 $\mu$ m; and such compensation film having a combined thickness such as 40 $\mu$ m; such that the skilled in the art would be able to find a reasonable thickness range to form relative thin compensation film that can be easily manufactured.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the multilayer compensation film of Winker and Su Yu with the teachings of using TAC as the substrate and using the polymer to form the Z layer and the compensation film having certain thin thickness as taught by Elman, since the skilled in the art would be motivated for easy manufacture.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299. The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi  
November 16, 2005

*Andrew Schechter*  
**ANDREW SCHECHTER**  
**PRIMARY EXAMINER**